

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claims 1 – 4. (Canceled)

Claim 5. (Currently Amended) An antibody which binds to a polypeptide having a sequence of SEQ ID NO: 1 (Breast Cancer Resistance Protein) which protein induces resistance to cancer chemotherapeutic drugs, ~~or fragments~~ or to full-length functional derivatives thereof.

Claim 6. (Original) The antibody of claim 5 which is monoclonal.

Claim 7. (Original) The antibody of claim 5 which is polyclonal.

Claims 8 – 11. (Canceled)

Claim 12. (Withdrawn) A method of determining whether a patient is resistant to cancer chemotherapy drugs, the method comprising assessing the expression of a Breast Cancer Resistance Protein, which protein induces resistance to cancer chemotherapeutic drugs, or fragments or derivatives thereof, in a cell of said patient, whereby overexpression of said protein establishes that said patient is resistant to said cancer chemotherapy.

Claim 13. (Withdrawn) A method of inhibiting the activity of Breast Cancer Resistance Protein in a patient's cell, said method comprising administering the

antibody of claim 5 to said patient, thereby inhibiting the activity of said Breast Cancer Resistance Protein.

Claim 14. (Withdrawn) A method of inhibiting the activity of Breast Cancer Resistance Protein in a patient's cell, said method comprising administering the antibody of claim 6 to said patient, thereby inhibiting the activity of said Breast Cancer Resistance Protein.

Claim 15. (Withdrawn) A method of inhibiting the activity of Breast Cancer Resistance Protein in a patient's cell, said method comprising administering the antibody of claim 7 to said patient, thereby inhibiting the activity of said Breast Cancer Resistance Protein.

Claims 16 – 17. (Canceled)

Claim 18. (Withdrawn) A method of enhancing a cancer patient's chemotherapy treatment, said method comprising inhibiting the activity of Breast Cancer Resistant Protein in a patient's cell by administering the antibody of claim 5, thereby inhibiting said Breast Cancer Resistance Protein.

Claims 19 – 20. (Canceled)

Claim 21. (Withdrawn) A method of enhancing a cancer patient's chemotherapy treatment, said method comprising inhibiting the activity of Breast Cancer Resistant Protein in a patient's cell by administering the antibody of claim 6, thereby inhibiting said Breast Cancer Resistance Protein.

Claim 22. (Withdrawn) A method of enhancing a cancer patient's chemotherapy treatment, said method comprising inhibiting the activity of Breast Cancer Resistant

Protein in a patient's cell by administering the antibody of claim 7, thereby inhibiting said Breast Cancer Resistance Protein.

Claim 23. (Withdrawn) The method of claim 12, wherein overexpression of said protein is detected using the antibody of claim 5.

Claim 24. (Withdrawn) The method of claim 12, wherein overexpression of said protein is detected using the antibody of claim 6.

Claim 25. (Withdrawn) The method of claim 12, wherein overexpression of said protein is detected using the antibody of claim 7.

Claim 26. (Withdrawn) A method of determining the cause of a cell's resistance to cancer chemotherapy drugs, said method comprising:

a) exposing drug-resistant cells to the fluorescent aza-anthrapyrazole BBR3390 in the presence or absence of an inhibitor of Breast Cancer Resistance Protein;

b) measuring the intracellular level of BBR390 in said cells;

c) comparing the intracellular level of BBR390 in said cells in the presence of said inhibitor to the level of BBR390 in said cells in the absence of said inhibitor;

wherein a reduction in the accumulation of BBR390 in said cells treated with BBR3390 in the presence of said inhibitor is an indication that drug resistance in said cells is caused by overexpression of Breast Cancer Resistance Protein.

Claim 27. (Withdrawn) The method of claim 26, wherein said inhibitor is fumitremorgin C (FTC).

Claim 28. (Withdrawn) The method of claim 26, wherein said drug resistant cells are obtained from a cancer patient and said method is used to determine the cause of chemotherapy drug resistance in said patient.

Claim 29. (Withdrawn) A method for enhancing a patient's chemotherapy treatment comprising inhibiting the activity of BCRP by administering a compound that inhibits BCRP activity.

Claim 30. (Withdrawn) The method of claim 29, further comprising administering a second compound that inhibits the activity of BCRP.

Claim 31. (Withdrawn) A method for identifying a compound that inhibits Breast Cancer Resistance Protein (BCRP) comprising:

- a) exposing cells which express BCRP to an agent transported by BCRP in the presence of absence of said compound;
- b) measuring the intracellular level of said agent in said cells; and
- c) comparing the intracellular level of said agent in said cells in the presence of said compound to the level of said agent in said cells in the absence of said compound,

wherein an increase in the accumulation of said agent in said cells treated with said agent in the presence of said compound is an indication that said compound inhibits BCRP.

Claim 32. (Withdrawn) The method of claim 31, wherein said cells are selected from the group consisting of MCF-7/AdrVp cells, colon carcinoma S1 cells, HT29

cells, gastric carcinoma EPG85-257 cells, fibrosarcoma EPR86-079 cells, and myeloma 8226 cells.

Claim 33. (Withdrawn) The method of claim 31, wherein said agent is selected from the group consisting of mitoxantrone, daunorubicin, and doxorubicin.

Claim 34. (Withdrawn) A method for identifying a compound that inhibits Breast Cancer Resistance Protein (BCRP) comprising:

- a) exposing cells expressing BCRP to a fluorescent aza-anthrapyrazole BBR3390 in the present or absence of said compound;
- b) measuring the intracellular level of BBR3390 in said cells; and
- c) comparing the intracellular level of BBR3390 in said cells in the presence of said compound to the level of BBR3390 in said cells in the absence of said compound,

wherein an increase in the accumulation of BBR3390 in said cells treated with BBR3390 in the presence of said compound is an indication that said compound inhibits BCRP.

Claim 35. (Withdrawn) The method of claim 34, wherein said cells are selected from the group consisting of MCF-7/AdrVp cells, colon carcinoma S1 cells, HT29 cells, gastric carcinoma EPG85-257 cells, fibrosarcoma EPR86-079 cells, and myeloma 8226 cells.

Claim 36. (Withdrawn) The method of claim 29, wherein said compound is the compound of claim 31 or claim 34.

Claim 37. (Withdrawn) The method of claim 29, wherein said compound is selected from the group consisting of an antibody to BCRP, an antisense RNA to BCRP, Fumitremorgin C, the compound of claim 31, and the compound of claim 34.